Work Order ID 61869

Wednesday, September 08, 2010 1:10:57 PM

Item ID: D3391-025 **Accept** **Setup Start**

Revision ID: **Stop**

Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 9/13/2010 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** M **Date:** 10-9-08 **Tooling:** _____ **Date:** _____ **Run Start**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Draw Nbr	Revision Nbr
D3391	Rev H/ DEO

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
100	MORI SEIKI CNC LATHE LARGE	0.00							
Mori Seiki	**Memo**	0.00							
Mori Seiki CNC Lathe Large	Turn as per Folio FA599 Rev: AA & Dwg D3391 Rev: H								
	scribe batch # on fwd end at 90 degree								
						QM	10-09-08		
110	QC2- Inspect parts off machine FAI/FAIB	0.00							
QC	**Memo**	0.00							
Quality Control									
						QM	10-05-08	(1)	
111	QC8- Inspect parts - second check	0.00							
QC	**Memo**	0.00							
Quality Control						/			
		10/11/15							

Work Order ID 61869

Wednesday, September 08, 2010 1:10:57 PM

Item ID: D3391-025 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 9/13/2010 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** **Stop**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	HAAS CNC VERTICAL MACHINING #1	0.00				1			
HAAS 1	**Memo**	0.00							
HAAS CNC vertical machine #1	1-Machine as per Folio FA 599 Rev: H & Dwg D3391 Rev: H 2-Deburr 10/11/16								
130	QC2- Inspect parts off machine FAI/FAIB	0.00				1			
QC	**Memo**	0.00							
Quality Control	10/11/16								
140	QC8- Inspect parts - second check	0.00				1	0		
QC	**Memo**	0.00							
Quality Control	B.A 10/11/22								

Work Order ID 61869

Wednesday, September 08, 2010 1:10:57 PM

Item ID: D3391-025 **Accept** **Setup Start**

Revision ID: **Stop**

Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 9/13/2010 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start**

QC: _____ _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 Skidtubes Skidtubes	Skidtubes **Memo** 1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803	0.00 0.00				10-11-23			
160 CNC Bend 1 CNC Delta 100 Bender	BENDING MACHINE - SKIDTUBES **Memo** Form as per Dwg D3391 Using Bend Prog 3391025	0.00 0.00				10-11-23			
170 QC Quality Control	QC5- Inspect part completeness to step on W/O **Memo**	0.00 0.00				10/11/23			

Work Order ID 61869

Wednesday, September 08, 2010 1:10:57 PM

Item ID: D3391-025 **Accept** **Setup Start**

Revision ID: **Stop**

Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 9/13/2010 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180		0.00							
Skidtubes	Skidtubes								
Skidtubes	**Memo**	0.00							

Skidtubes

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only.

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217 Wearplate Jig .
*****Do Not Open To Finished Size*****

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2 previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'bore as per dwg D3391

6-Open up all wearshoe , wearplate to 0.297"and float bag holes to 0.328" as per Dwg D3391.

7-Deburr

10-11-30

Work Order ID 61869

Wednesday, September 08, 2010 1:10:57 PM

Item ID: D3391-025 **Accept** **Setup Start**

Revision ID: **Stop**

Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 9/13/2010 **Req'd Qty:** 1.00 **Customer:**

Reference:

Run Start

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Stop**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC5- Inspect part completeness to step on W/O	0.00							
QC	**Memo**	0.00							
Quality Control									
200	Chemical Conversion Coat per QSI005 4.1	0.00							
HandFinish	**Memo**	0.00							
Hand Finishing									
210	QC3- Inspect Part Finish	0.00							
QC	**Memo**	0.00							
Quality Control									

Work Order ID 61869

Wednesday, September 08, 2010 1:10:57 PM

Item ID: D3391-025 **Accept** **Setup Start**

Revision ID:

Item Name: Aft Tube Assembly **Stop**

Start Date: 9/8/2010 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 9/13/2010 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	Skidtubes	0.00							
Skidtubes	**Memo**	0.00							
Skidtubes	Instal spacers as per dwg D3391 A/R Magnabond 6398 Batch: M115 580 exp. date : 07 2011 cure time 12hrs as per QSI0015					10-12-6			
230	QC5- Inspect part completeness to step on W/O	0.00							
QC	**Memo**	0.00 10/12/13							
Quality Control									
235	Pressure Wash per QSI005 4.3	0.00 10/12/13				1			
HandFinish	**Memo**	0.00							
Hand Finishing	AND REALODINE AS PER PAR09-043								

Work Order ID 61869

Wednesday, September 08, 2010 1:10:57 PM

Item ID: D3391-025 **Accept** **Setup Start**

Revision ID: **Stop**

Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 9/15/2010 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240 Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum M115951 **Memo** START TIME: 1:50 OVEN TEMPERATURE: 320° FINISH TIME: 2:20	0.00 0.00				1	10-12-5		
250 QC Quality Control	QC3- Inspect Part Finish **Memo**	0.00 => 10/12/16 0.00				1	0		
260 HandFinish Hand Finishing	HandFinishing **Memo** 1-Install inserts as per Dwg D3391 2-Install Aft Cap as per Dwg D3391 A/ R Sikaflex-241/-291 M11514 Sikaflex expiry date: 11/01	0.00 0.00 10/12/16				1	0		

Work Order ID 61869

Wednesday, September 08, 2010 1:10:57 PM

Item ID: D3391-025 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 9/13/2010 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** **Stop**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270 QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00				(10)			
	Memo	0.00							
280 Packaging Packaging	Identify as per dwg & Stock Location:_____	0.00				10/12/16 (1)			
	Memo	0.00							
290 QC Quality Control	QC21- Final Inspection - Work Order Release	0.00							
	Memo	0.00				10/12/16			

10/12/16

MF
10-12-16

Picklist Print

Wednesday, September 08, 2010 1:11:02 PM

5

Work Order ID: 61869

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Required Date:** 9/13/2010

Start Qty: 1.00 **Required Qty:** 1.00

Comments:

IPP Rev B 06-02-07 ECN773 dwg rev. D EC
IPP Rev:C 06-03-28 Update Manuf. Instructions JLM □□ □□
IPP rev D 07.03.20 revF dwg EC
IPP rev E 07.11.07 rev G dwg ecn 1053p EC verified by: DD
IPP Rev:F 07-11-13 ECN 1056 DD verified by: EC
IPP Rev:G 08-09-10 revH as per dwg DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6014-090		Manufactured	No			100	Each	29.0000	1	1			
ALUMINUM EXTRUSION										B 56572 9.m 10-09-06			
				Location		**Loc Qty**		**Loc Code**					
				LG		29							
					56572	29							
D3670-4-200		Manufactured	No			230	Each	64.0000	4	4			
SPACER													
				Location		**Loc Qty**		**Loc Code**					
				LG		64							
					57349	64							
D2646		Manufactured	No		B63310 17	270	Each	60.0000	1	1			
Aft Cap										10/12/16			
				Location		**Loc Qty**		**Loc Code**					
				FP-4		55							
					57332	55				X1			
				FP6		5							
					52663	5							

4 10-12-06

Picklist Print

Wednesday, September 08, 2010 1:11:02 PM

Work Order ID: 61869

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Required Date:** 9/13/2010

Start Qty: 1.00 **Required Qty:** 1.00

D3537-1	Manufactured	No		270	Each	30.0000	1	1
Wearpad								MH 10/12/16

Location	Loc Qty	Loc Code	
FP	1	B63545	X1
55465	1		
FP17	6		
57713	3		
60491	3		
FP18	23		
61201	23		

D3537-7	Manufactured	No		270	Each	15.0000	1	1
Wearpad								MH 10/12/16

Location	Loc Qty	Loc Code	
FP	5		
46346	5		
FP16	10		
56831	10		X1

D3553-1	Manufactured	No		270	Each	41.0000	1	1
Gasket								MH 10/12/16

Location	Loc Qty	Loc Code	
FP	41		
33868	1		
56568	40		X1

Picklist Print

Wednesday, September 08, 2010 1:11:02 PM

Work Order ID: 61869

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Required Date:** 9/13/2010

Start Qty: 1.00 **Required Qty:** 1.00

D3553-3	Manufactured	No		270	Each	45.0000	1	1
Gasket								M 10/12/16

Location	Loc Qty	Loc Code	
FP	45		
53480	45		X1

D3672-1	Manufactured	No		270	Each	903.0000	2	2
Phenolic Washer								M 10/12/16

Location	Loc Qty	Loc Code	
ST077	903		
42329	150		
52505	753		X2

ALS4-1032-130	Purchased	No		260	Each	2,584.000	14	14
Insert								M 10/12/16

Location	Loc Qty	Loc Code	
PKG11	2408	M116049	X 14
114723	2408		
ST282	137		
110511	10		
114407	127		
ST381	39		
114654	39		

ALS4-1032-225	Purchased	No		270	Each	5,329.000	12	12
Insert								M 10/12/16

Location	Loc Qty	Loc Code	
PK011	5329		
110768	5329		V12

Picklist Print

Wednesday, September 08, 2010 1:11:02 PM

Work Order ID: 61869

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Required Date:** 9/13/2010

Start Qty: 1.00 **Required Qty:** 1.00

AN3C4A	Purchased	No		270	Each	2,400.000	6	6

BOLT

HL 10/12/16

Location	Loc Qty	Loc Code	
ST303	372		
115438	372	M115936	X6
ST350	2028		
114108	14		
114416	12		
114523	2		
115300	1000		
115589	1000		

AN3C5A	Purchased	No		270	Each	1,530.000	4	4

Bolt

HL 10/12/16

Location	Loc Qty	Loc Code	
ST350	1520		
114330	11	M115835	X4
115015	209		
115108	300		
115316	300		
115371	100		
115422	100		
115594	500		
ST351	10		
113121	10		

Picklist Print

Wednesday, September 08, 2010 1:11:02 PM

Work Order ID: 61869

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 9/8/2010 **Required Date:** 9/13/2010

Start Qty: 1.00 **Required Qty:** 1.00

AN960C10L	NAS1149C0332R	Purchased	No		270	Each	155.0000	10	10

washer

Location	Loc Qty	Loc Code
ST245	155	M115832 x10
107534	29	
109545	54	
111548	72	

DART AEROSPACE LTD	Work Order:	111869
Description: Float Skidtube (412)	Part Number:	D3391-3
Inspection Dwg: D3391 **Rev:** H		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [] Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010	14.000	✓			
3.500	+/-0.010	3.491	✓			
88.93	+/-0.030	88.940	✓			
44.995	+/-0.030	44.995	✓			
Ø3.200	+/-0.010	Ø 3.201	✓			
88.93	+/-0.030	88.940	✓			
Ø3.750	+/-0.010	Ø 3.750	✓			
30° x 160° chamfer	+/-0.010	30° x 160°	✓			

Measured by: G. **Date:** 10-09-08

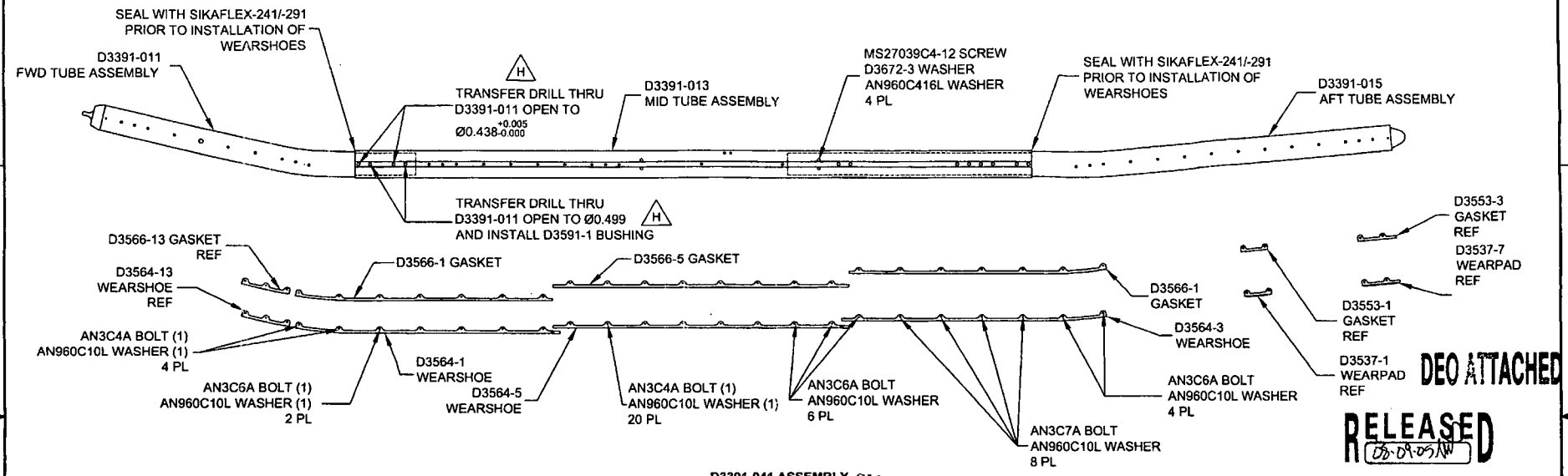
Audited by: [signature] **Date:** 10/11/15

HAAS Section						
1.526	+0.000/-0.030	1.522	✓			
7.500	+/-0.010	7.500	✓			
27.750	+/-0.010	27.750	✓			
31.750	+/-0.010	31.750	✓			
35.250	+/-0.010	35.250	✓			
3.300	+/-0.010	3.306	✓			
0.200	+/-0.010	.159	✓			
3.520	+/-0.010	3.528	✓			
0.687	+0.010/-0.000	.687	✓			
R0.062	+/-0.010	R.062	✓			
Ø0.484	+0.005/-0.001	Ø.487	✓			

Measured by: [signature] 10/11/15 **Date:**

Audited by: K.A **Date:** 10/11/22

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	KJ MA



DEO ATTACHED

RELEASED 08-09-05 NW

D3391-041 ASSEMBLY

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 4669

10-8-31 C1809

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

REV.	DESCRIPTION	BY	DATE
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07

DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 1 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE
DE APPR.		SCALE NTS
DATE	08.08.20	

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Dart Aerospace Ltd

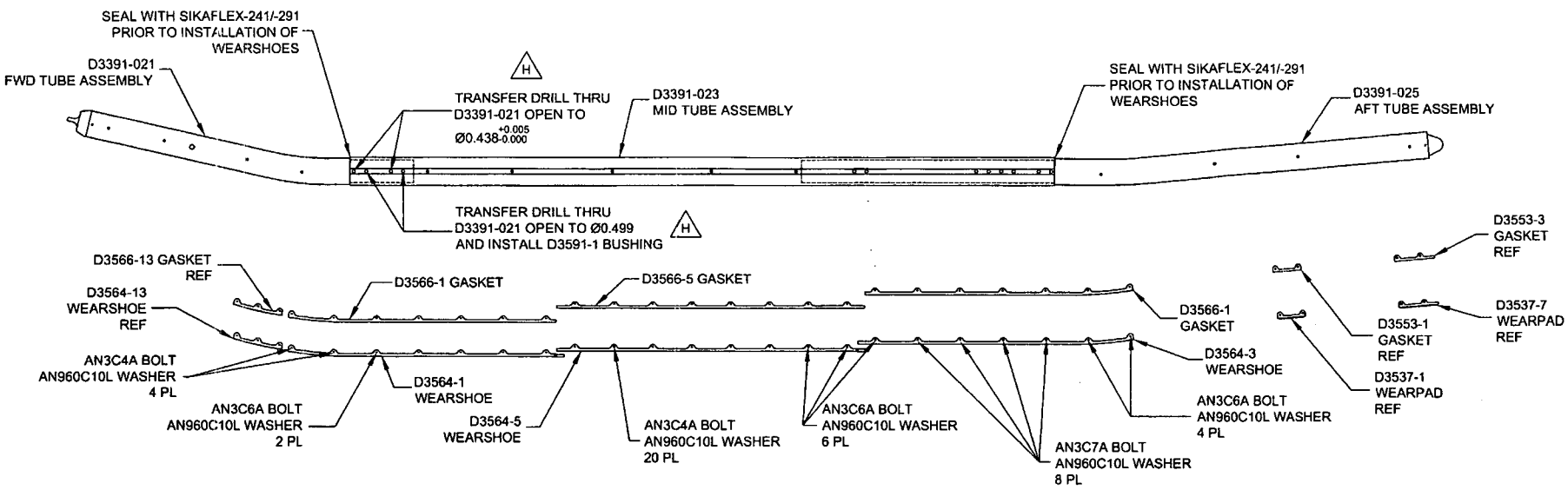
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries



D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

	QTY -043	PART NUMBER	DESCRIPTION
	X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
	1	D3391-021	FWD TUBE ASSEMBLY
	1	D3391-023	MID TUBE ASSEMBLY
	1	D3391-025	AFT TUBE ASSEMBLY
	1	D3564-1	WEARSHOE
	1	D3564-3	WEARSHOE
	1	D3564-5	WEARSHOE
	2	D3566-1	GASKET
	1	D3566-5	GASKET
H	2	D3591-1	BUSHING
	24	AN3C4A	BOLT
	12	AN3C6A	BOLT
	8	AN3C7A	BOLT
	44	AN960C10L	WASHER

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

w/o 61869
61869

DEO ATTACHED

RELEASED
08-09-20 MP

DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 2 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	

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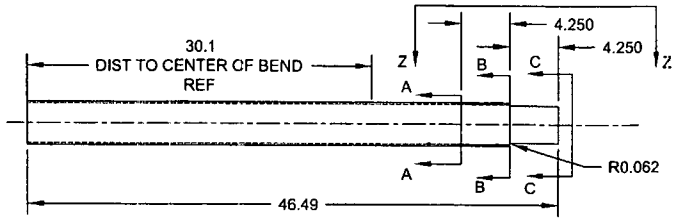
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

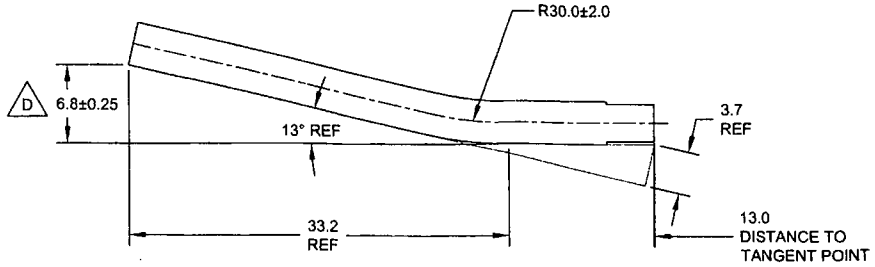
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

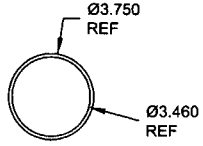
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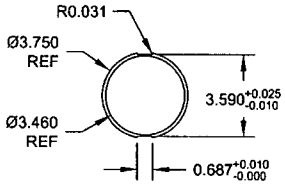
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



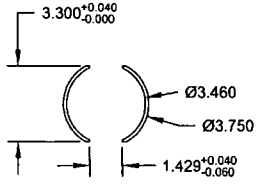
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



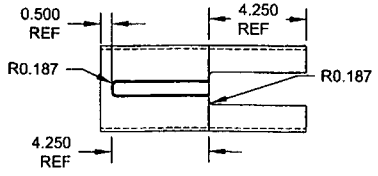
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

w/c ~~HHG~~
G1869
DEO ATTACHED

RELEASED
08.31.05 NW

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CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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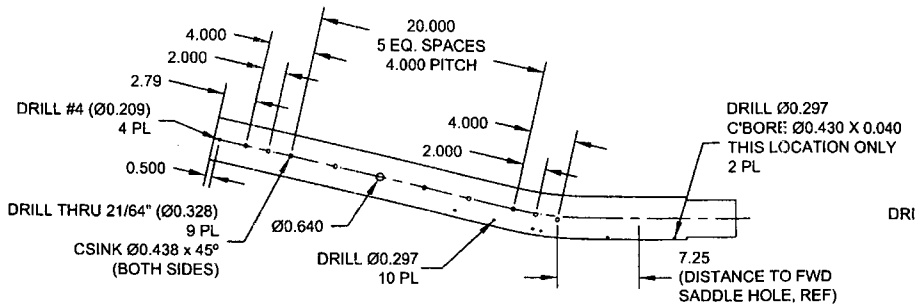
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DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

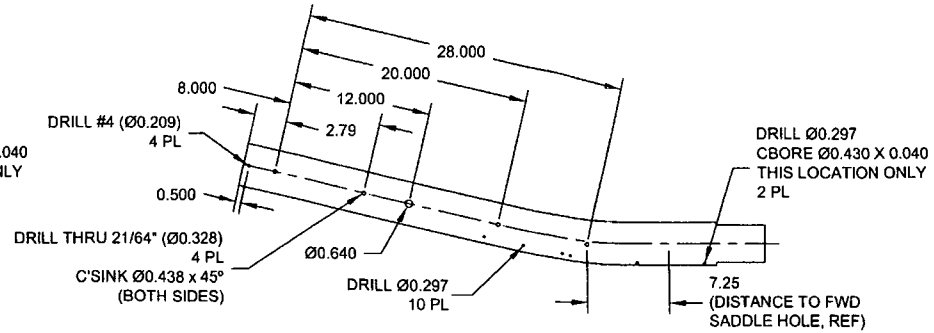
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DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

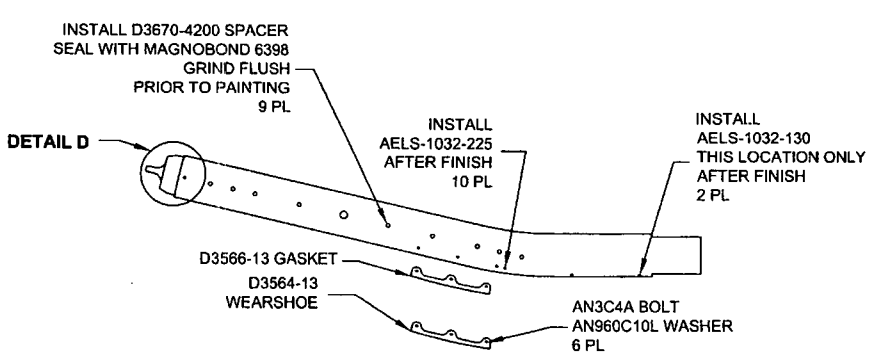
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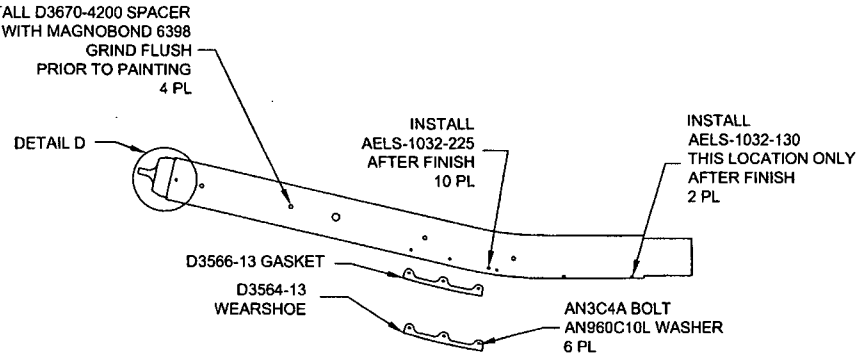
D3391-011 DRILLING DETAIL



D3391-021 DRILLING DETAIL



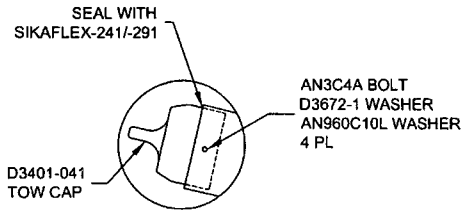
D3391-011 ASSEMBLY DETAIL



D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT



DETAIL D
SCALE 2X

w/ 16-11669
01 8669

DEO ATTACHED

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08-09-05 MW

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DRAWN	AJS	
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 4 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	

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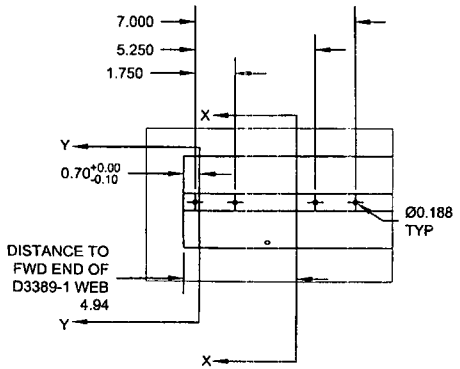
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

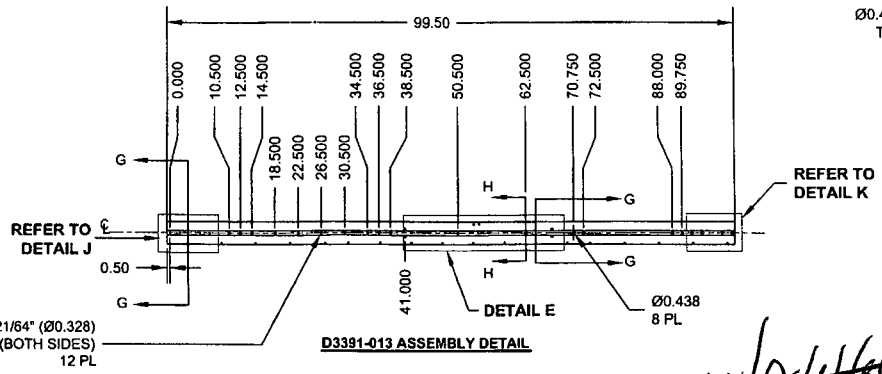
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DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

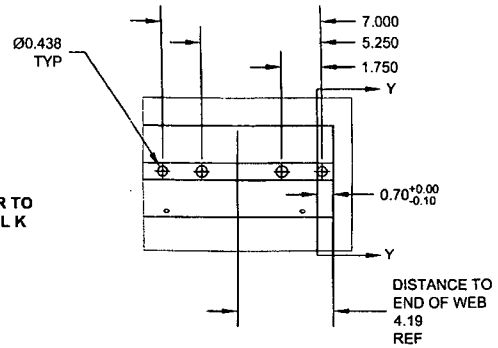
NOTE: Date & initial all entries



DETAIL J
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D3391-013 ASSEMBLY DETAIL

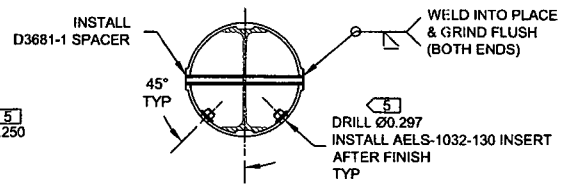


DETAIL K
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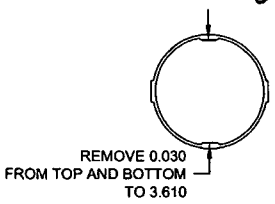
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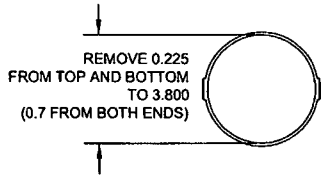
SECTION G-G
SCALE 5X



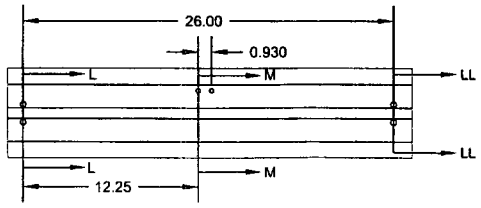
SECTION H-H 12 PL
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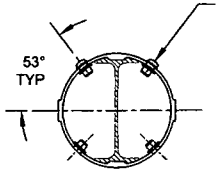
SECTION X-X
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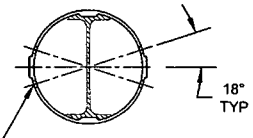
SECTION Y-Y
SCALE 5X



DETAIL E
SCALE NONE



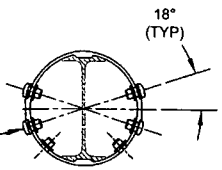
SECTION M-M
SCALE 5X



SECTION LL-LL
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



SECTION L-L
SCALE 5X

D3391-013 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

DEO ATTACHED

RELEASED 08-04-20

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AJS	PORT HADLOCK, WA
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 5 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE SCALE NTS
DE APPR.		
DATE 08.08.20		

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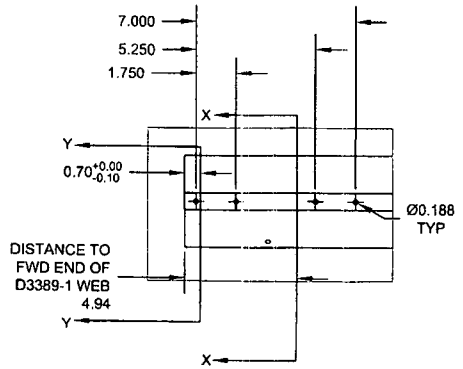
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

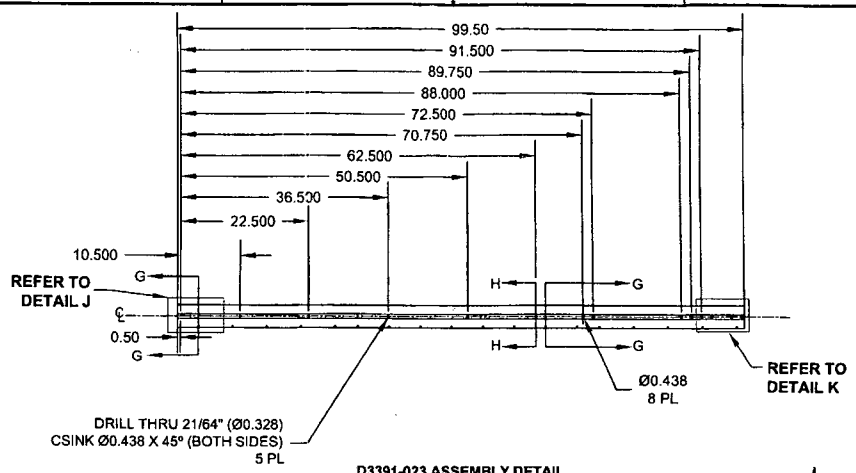
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DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

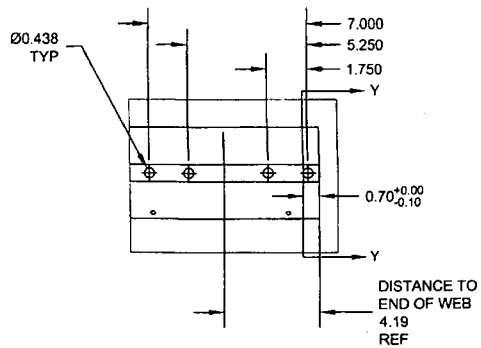
NOTE: Date & initial all entries



DETAIL J
SCALE 4X



D3391-023 ASSEMBLY DETAIL

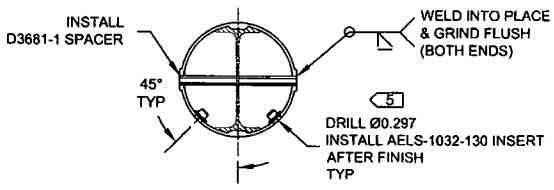


DETAIL K
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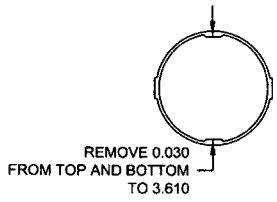
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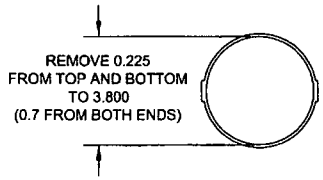
SECTION G-G
SCALE 5X



SECTION H-H 5 PL
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

DEO ATTACHED

RELEASED
08-09-20 JW

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY
1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 6 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE 08.08.20		

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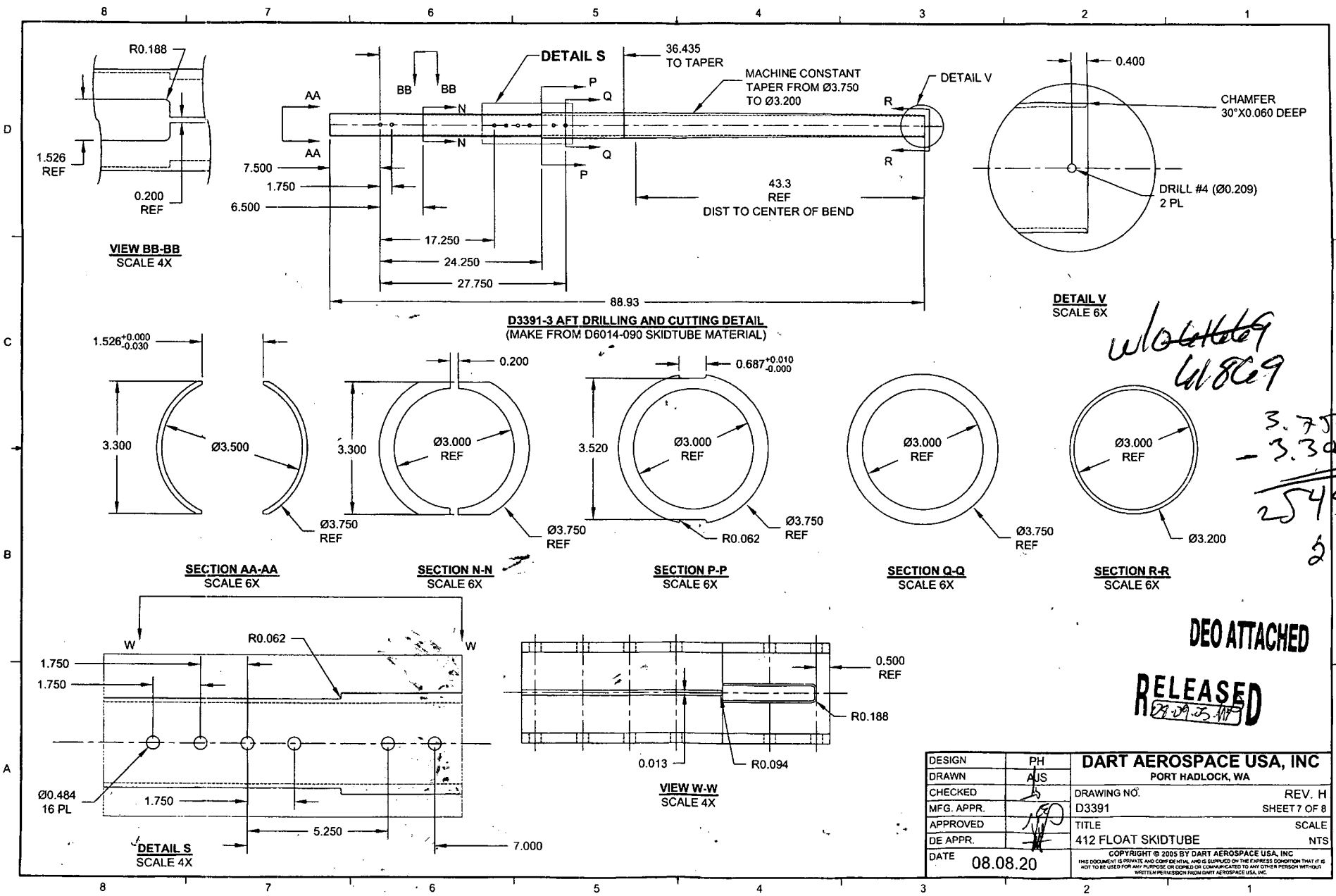
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries



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DRAWN	AJS	PORT HADLOCK, WA
CHECKED		DRAWING NO. D3391 — REV. H
MFG. APPR.		SHEET 7 OF 8
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	

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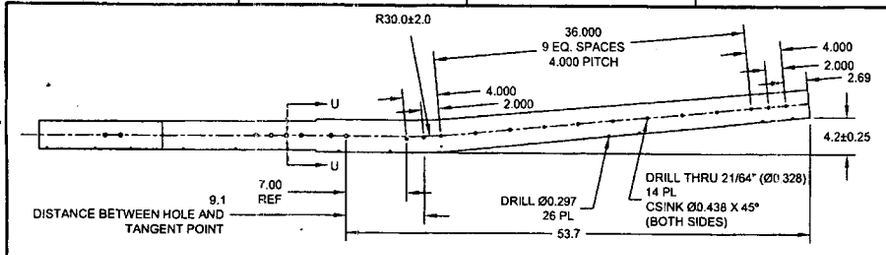
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

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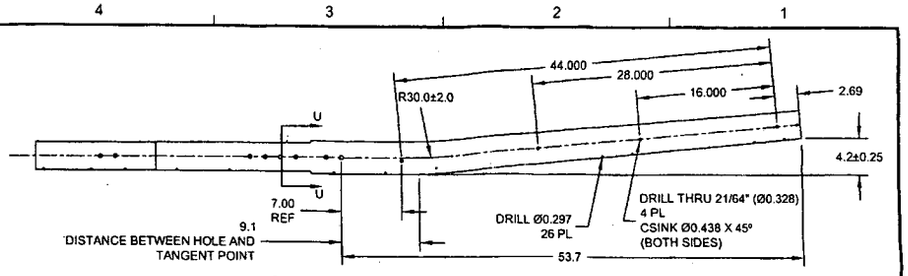
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DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

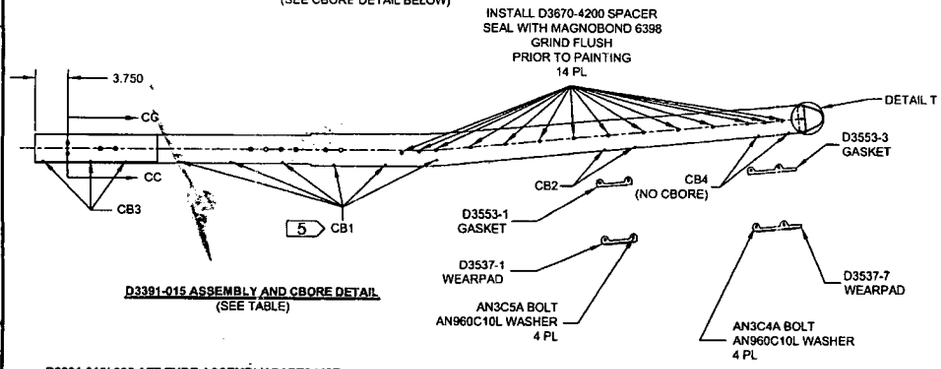
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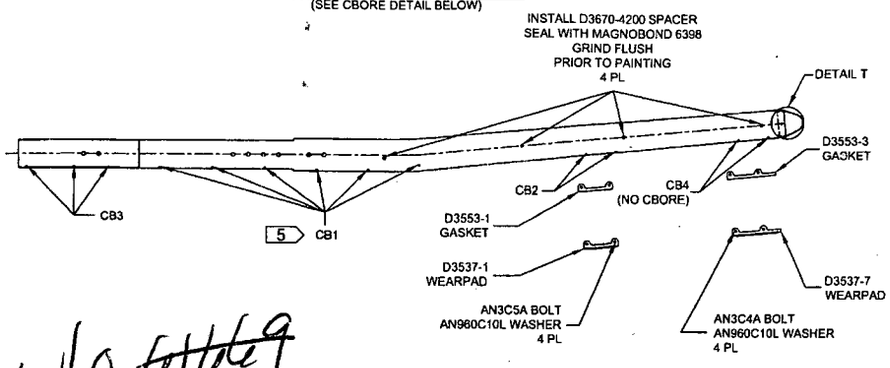
D3391-015 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



D3391-025 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



D3391-015 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)



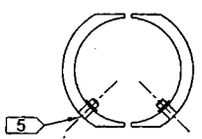
D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

w/o ~~attached~~
as69

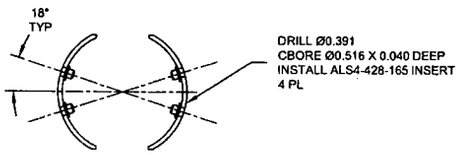
775

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

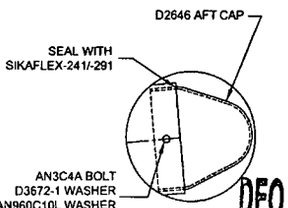
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER



SECTION U-U
SCALE 3X



SECTION CC-CC
SCALE 3X



DETAIL T
SCALE 4X

DEO ATTACHED

RELEASED
08.09.05 MP

CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AJS	PORT HADLOCK, WA
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 8 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE 08.08.20		

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

DRAWING NO.	TITLE	REV. H	DART AEROSPACE USA, INC	D.E.O. NO.	SHEET NO.	SCALE
D3391	412 FLOAT SKIDTUBE		ENGINEERING ORDER	D3391-H-1	SHEET 1 OF 1	NTS

DRAWN	CHECKED	MFG. APPR.	APPROVED	DE APPR.
DATE 09.09.23	DATE 09.09.24	DATE 09/09/25	DATE 09/09/30	DATE 09/09/30

PURPOSE:
LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

RELEASED
2010 -02- 02
MP

CHANGE:
AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.~~ COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

w/o ~~11/09~~
9/18/09

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W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries